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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/065,505 | 10/25/2002 | Gary Steven Strumolo | 202-0206 FAM | 2126 |

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KEVIN G. MIERZWA
ARTZ & ARTZ, P.C.
28333 TELEGRAPH ROAD, SUITE 250
SOUTHFIELD, MI 48034

EXAMINER

NGUYEN, THU V

| ART UNIT | PAPER NUMBER |
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3661

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,505

Applicant(s)

STRUMOLO ET AL.

Examiner

Thu Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment filed on September 22, 2004 has been entered. By this amendment, all claims 1-17 are pending in the application.

Claim Objections

1. Claim 6 is objected to because of the following informalities:

In claim 6, line 1, the claimed "said region" should be corrected to "said critical zone", since the "region" denotes the area sensed by the first remote sensor (claim 1, line 4).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-11, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shuman et al (US 2003/0065432) in view of Tsutsumi et al (US 5,617,085) and further in view of Winner et al (US 6,580,385).

As per claim 1-2, 7-9, Shuman teaches a crash assessment and safety activation system comprising: a first remote sensor 202(7) (fig.4) and a first visual sensor 202(6) (fig.4) (para 0064), a first safety device actuator to activate a first safety device, a controller 210, 230 (fig.2) for controlling a first safety device in response to the result concluded from the first remote and

visual sensor (para 0069; 0086; 0154; 0166). Shuman does not explicitly suggest letting the visual sensor sense at least a portion of the region sensed by the remote sensor, including sensing critical zone of the host vehicle, and generating confirmation signal, however, since Shuman teaches providing images and distance of all the objects around the vehicle (para 0154) so that activation of a safety device is determined based on the signal (para 0164, 0166), Shuman obviously teaches that the visual sensor senses at least a portion of region sensed by the remote sensor including the critical zone. Winner also teaches the capability of detecting possible obstacles when the vehicle enters the critical region that is within 2m-10m from the vehicle (col.3, lines 11-27). Moreover, Shuman teaches using both data from the remote and visual sensor for confirming the existence as well as position and size of objects to determine activation of safety devices (para 0086, 0154), and Tsutsumi teaches confirming the target object using both first object signal and visual signal (col.13, lines 40-64; col.14, lines 3-7, lines 61-67; col.13, lines 15-67; col.16, lines 1-24). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize both the first and visual signal of Shuman to confirm the existence of an object in critical zone as taught by Winner and Tsutsumi in order to enhance speed and accuracy in determining activating safety devices.

As per claim 3-4, Shuman teaches including a second remote sensor 202(15) (fig.4). Further, with respect to claim 4, angling the sensors at different angles would have been both known and obvious for detecting objects at desired angle.

As per claim 5, since Shuman teaches dynamically determining the size and type of the objects on the street along the road the vehicle is passing by (para 0086), Shuman obviously encompasses teaching determining if the object is a vehicle. Moreover, since Shuman teaches continuously monitoring the objects surrounding the vehicle by gathering data detected from the visual and several remote sensors (para 0085) Shuman obviously encompasses teaching polling of the sensors for continuing monitoring the surrounding environment with objects in the field of view of the sensors.

As per claim 6, 11 Winner teaches a well known visual sensor capable of sensing a region of 3m (col.3, lines 11-26). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the well known sensor shown by Winner to the system of Shuman in order to provide short range detecting of object.

As per claim 10, 13, refer to claims 5, 8 above.

4. Claims 12, 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shuman et al (US 2003/0065432) in view of Tsutsumi et al (US 5,617,085) and further in view of Winner et al (US 6,580,385) and Sato et al (US 3,778,823).

As per claim 12, Sato teaches determining whether a potential for collision is within a safety device activation threshold (col.6, lines 23-30; col.7, lines 1-13; col.10, lines 32-61). It would have been obvious to a person of ordinary skill in the art at the time the invention was

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made to establish a device activation threshold for activating the safety device in the system of Shuman as taught by Sato in order to facilitate determining of possibility of crash and activating safety devices accordingly.

As per claim 14-16, refer to claims 1, 5-6, 12 above.

As per claim 17, Shuman teaches classifying the target object (para 0086-0087; 0154), further using bounding box, etc to estimate the size of the objects from the picture received from a camera sensor would have been well known.

Response to Arguments

In response to applicant's argument on page 10, first paragraph; page 11, first paragraph; page 12, lines 2-9, independent claims 1, 9, 14, as well as claims 6, 11, 12, 16-17 do not specifically define the critical zone which sets the threshold such that when the vehicle enter the critical distance the visual sensor may instantly give a determination as to whether it is a vehicle or not as asserted by the applicant. Instead, independent claims 1, 9 and 14 appears to defined the critical zone as a portion of the region sensed by the first remote sensing sensor. Since the visual sensor of Shuman is capable of providing visual image of the objects surrounding the vehicle, including the objects near the host vehicle, and depending on the data concerning the object such as the distance from the vehicle (within the critical zone), the safety device is activated (para 0064; 0074; 0087; 0166), Shuman obvious includes teaching the visual sensor

adapted for sensing objects in the critical zone as well. Moreover, even if the independent claims include the limitation asserted by applicant, the claimed limitation does not overcome the teaching of Winner, in col.3, lines 11-26 teaches a well known visual sensor that automatically detects objects within the range of 2m-10m. Therefore, when the vehicle crosses the critical threshold zone of 2m-10m, the visual sensor will obviously detect possible obstacle being in that range instantly and provide such the image data for recognition of the shape of the object in the critical zone, the processor is well known to instantly analyzes the image signal the moment it receives such the signal from the visual sensor input device. Applicant fails to highlight the difference between the capability of providing object image instantly when the vehicle enter the critical zone of 2m-10m and the processing device recognize the objects at the critical range taught by Winner with the capability of instantly determining if the object is vehicle when the vehicle enter a critical zone of the present application.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

~~CFR-1.136(a) will be calculated from the mailing date of the advisory action. In no event,~~

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any response to this final action should be mailed to:

Box AF

Commissioner for Patents

P.O. Box 1450

Alexandria VA 22313-1450

or faxed to:

(703) 872-9306 (for formal communications; please mark "EXPEDITED
PROCEDURE")

Or:

(703) 872-9306 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park V, 2451 Crystal
Drive, Arlington. VA., Seventh Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Thu Nguyen whose telephone number is (703) 306-9130. The
examiner can normally be reached on Monday-Thursday from 8:00 am to 6:00 pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Thomas Black, can be reached on (703) 305-8233. The fax phone number for this

~~Group is (703)-305-7687.~~

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1113.



THU V. NGUYEN
PRIMARY EXAMINER

November 22, 2004
